

SECTION III—REMARKS

This amendment is submitted in response to the Office Action mailed June 6, 2006. Claim 19 is amended and claims 1-19 remain pending in the application. Applicants respectfully request reconsideration of the application and allowance of all pending claims in view of the above amendments and the following remarks.

Rejections Under 35 U.S.C. § 112

The Examiner rejected claim 19 under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. According to the Examiner, the limitation “frame grabber” in claim 19 is indefinite because there is insufficient antecedent basis for this limitation.

Applicants have amended claim 19 so that it depends on claim 15 instead of claim 1. With this change in dependency, Applicants submit that there is sufficient antecedent basis for the “frame grabber” limitation in claim 19. Applicants therefore respectfully request withdrawal of the rejection.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1-19 under 35 U.S.C. § 103(a) as obvious in view of, and therefore unpatentable over, U.S. Patent No. 6,236,735 to Bjorner *et al.* (“Bjorner”) in view of U.S. Patent Application Publication No. 2003/0193602 to Satoh *et al.* (“Satoh”). Applicants respectfully traverse the Examiner’s rejections. To establish a *prima facie* case of obviousness, three criteria must be met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As explained below, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness.

Claim 1 recites an apparatus combination including a machine-vision system comprising an internal camera operatively connected to an image buffer, and a digital signal processing unit and a camera port connected to the image buffer, wherein the port is adapted to allow an external camera to be connected to the machine vision system “so

that the same image buffer can capture images from both the internal camera and the external camera.” The Examiner alleges that *Bjorner* discloses every element and limitation of the claim, except for a camera port connected to the same image buffer as the internal camera so that the same image buffer can capture images from both the internal camera and the external camera. The Examiner cites *Satoh* to make up for this deficiency in *Bjorner*, and concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine *Bjorner* with *Satoh* to arrive at the presently claimed invention.

Applicants respectfully disagree, on at least two grounds. First, as noted by the Examiner, *Bjorner* discloses a system in which a low resolution line buffer 56 captures images from a low resolution line-scan camera 16 and a separate high-resolution line buffer 68 captures images from a high-resolution line-scan camera 22. *Satoh* discloses that images of different resolutions can be stored in the same memory buffer, but in *Satoh* all the stored images are different-resolution versions of the same image that originates from a single camera (paragraph [0046], lines 7-15). *Bjorner* and *Satoh* therefore both teach that there should be a one-to-one correspondence between camera and buffer—in other words, both references teach that each camera should have its own buffer. Neither *Bjorner* nor *Satoh* discloses multiple cameras coupled to the same image buffer, and the combination of *Bjorner* and *Satoh* thus does not disclose every element and limitation of the claimed invention, in which “the same image buffer can capture images from both the internal camera and the external camera.”

Second, even if *Bjorner* and *Satoh* did disclose every element and limitation of the claim, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP § 2143.01(III) *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). In this case, *Bjorner* teaches against replacing its two line buffers with a single buffer. In *Bjorner*, data throughput and minimization of errors is vital because the packages from which the system reads data are moving by on a conveyor belt. As a result there a very limited time in which to capture and process data from the low-resolution camera before the package moves to the high-resolution camera, and only a very limited time in which to capture and decode data from the high-resolution camera

before the package moves out of the field of view. It is well known in the art that optimum throughput is achieved by matching the buffer type to the format and size of the received data. This is so because matching the buffer to the data eliminates wasted memory space and memory access conflicts and overwrites, and also minimizes the overhead associated with the substantial memory management that would be required for the same buffer to handle data of different formats and sizes. *Bjorner* clearly implements and teaches this principle: low-resolution line buffer 56 captures low-resolution line data and high-resolution line buffer 68 captures high-resolution line data. *Bjorner* thus teaches away from replacing its two line buffers with a single buffer because such a modification would decrease the data throughput that is so crucial in *Bjorner*.

For the reasons above, Applicants respectfully submit that *Bjorner* and *Satoh* cannot obviate the claim because the combined references not disclose, teach or suggest a combination in which “the same image buffer can capture images from both the internal camera and the external camera.” Applicants submit that claim 1 is therefore allowable and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 2-6, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 1 is in condition for allowance. Applicants submit that claims 2-6 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

Claim 7 recites a process combination including capturing a first image using a machine vision system comprising an internal camera, an image buffer, and a digital signal processing unit, storing or processing the first image, and “capturing a second image using an external camera connected to the same image buffer.” By analogy to the discussion above for claim 1, Applicants submit that *Bjorner*, when combined with *Satoh*, cannot obviate this claim because the combined references do not disclose, teach or suggest a process combination including “capturing a second image using an external camera connected to the same image buffer.” Applicants submit that claim 7 is therefore

in condition for allowance and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 8-9, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 7 is in condition for allowance. Applicants submit that claim 8-9 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of this claim.

Claim 10 recites a system combination including an internal camera operatively connected to an image buffer, and a digital signal processing unit, a camera port “connected to the same image buffer,” wherein the port is adapted to allow an external camera to be connected to the machine vision system “so that the same image buffer can capture images from both the internal camera and the external camera.” By analogy to the discussion above for claim 1, Applicants submit that *Bjorner*, when combined with *Satoh*, cannot obviate this claim because the combined references do not disclose, teach or suggest a system combination including a camera port “connected to the same image buffer” so that “the same image buffer can capture images from both the internal camera and the external camera.” Applicants submit that claim 10 is therefore in condition for allowance and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 11-14, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 10 is in condition for allowance. Applicants submit that claims 11-14 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

Claim 15 recites an apparatus combination including a machine-vision system comprising an internal camera operatively connected to a frame grabber, and a digital

signal processing unit and a camera port connected to the frame grabber, wherein the port is adapted to allow an external camera to be connected to the machine vision system “so that the same frame grabber can capture images from both the internal camera and the external camera.” By analogy to the discussion above for claim 1, Applicants submit that *Bjorner*, when combined with *Satoh*, cannot obviate this claim because the combined references do not disclose, teach or suggest a process combination including an internal camera operatively connected to a frame grabber and a camera port connected to the frame grabber, wherein the port is adapted to allow an external camera to be connected to the machine vision system “so that the same frame grabber can capture images from both the internal camera and the external camera.”

Regarding claims 16-19, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 15 is allowable. Claims 16-20 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request allowance of these claims.

Conclusion

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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Date: 8-30-06

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